

VII. HYRACODON PETERSONI, A NEW CURSORIAL RHINOCEROS FROM THE LOWER OLIGOCENE.

BY HORACE ELMER WOOD, II.

(PLATE XXVI).

The specimen on which this species is based, was collected by Mr. O. A. Peterson in 1901. He recognized that it was probably a new species, cataloging it as "No. 3572, sp. nov.(?)." On the occasion of a visit to the Carnegie Museum he called certain of its peculiarities to my attention, and very kindly has permitted me to describe it. I am indebted to Mr. Sidney Prentice for the drawing and photograph illustrating this paper. The investigation, of which this article is a by-product, was assisted by a grant from the New York Academy of Sciences.

Order **PERISSODACTYLA** Owen.

SUPERFAMILY RHINOCEROTOIDEA Gill.

Family HYRACODONTIDÆ Cope.

Hyracodon petersoni, sp. nov.

The holotype is in the Carnegie Museum, Cat. Vert. Foss. No. 3572, collected by Mr. O. A. Peterson from the Titanotherium Beds of Badland Creek, Sioux County, Nebraska, in 1901.

The most striking specific characters are the very primitive P^3 and P^4 , with posterior outlets for the median valley, associated with the very progressive M^3 , with the posterior buttress nearly obliterated, approaching the *Trigonias osborni*-stage. This is the most primitive species of *Hyracodon* as yet described.

The upper dentition is almost complete. Both upper first incisors, the right upper third incisor and the roots or stubs of the other front teeth are present. They are of the typical *Hyracodon* type. Right P^1 has protoloph and metaloph separate and nearly parallel, the metaloph, after slight wear, being fused with the posterior cingulum. The basal cingulum surrounds the tooth on

three sides, anteriorly, internally, and posteriorly, except for a slight interruption internally by the metaloph. P^2-M^2 are present on

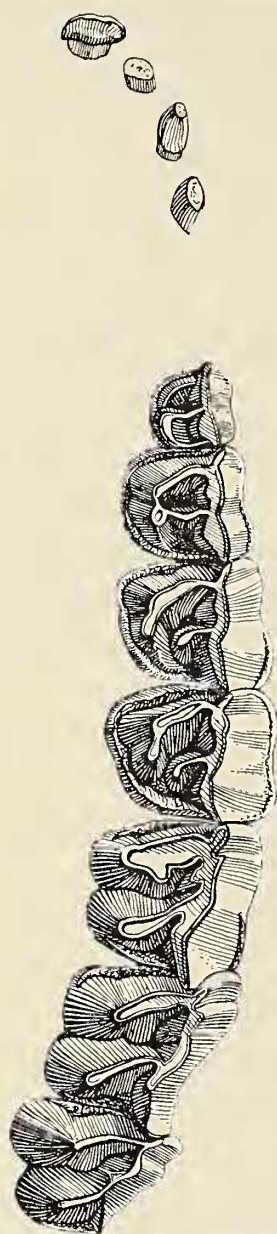


FIG. 1. Dentition of
Hyracodon petersoni

Wood. $\times \frac{3}{4}$

both sides, as is left M^3 . The hypocone of P^2 is joined about equally firmly to the protocone, and to the rest of the metaloph. There is a trace of an external cingulum on the metacone, and a very small crista. P^3-M^3 have very large cristæ. P^2-4 are completely surrounded, anteriorly, internally, and posteriorly, by a well-developed basal cingulum. P^3 has the hypocone still closely attached to the protocone, although the future separation is indicated by a groove on each side of the slope of the ridge. There is scarcely any tendency for the metaloph to fuse with the hypocone, though they would become confluent in extreme old age. The median valley escapes posteriorly. There is a distinct external cingulum on the metacone. P^4 is almost identical, except that the posterior slope of the hypocone is more abrupt, and that the external cingulum is unusually sharp on the metacone, and extends across the paracone. There is no internal cingulum on the molars. M^1 has an external cingulum on the metacone. M^3 has a greatly reduced posterior extension of the ectoloph. Near the crown there is scarcely any ridge, but it is quite well-marked basally, joining the posterior cingulum, with a definite postfossette.

MEASUREMENTS.

	Right	Left
Anterc-posterior length I^1-C^1 over all.....	27.0 mm.	28.7 mm.
Anterc-posterior diameter I^1	4.2 mm.	4.0 mm.
Transverse diameter I^1	()	7.3 mm.
Antero-posterior diameter I^3	4.8 mm.	()
Transverse diameter I^3	4.0 mm.	()
Antero-posterior diameter C^1	4.7 mm.	()
Transverse diameter C^1	3.8 mm.	()
Antero-posterior length P^2-M^3 over all.....	()	95.7 mm.

Antero-posterior length P ¹ -P ⁴ over all.....	53.8 mm.	()
Antero-posterior length P ² -P ⁴ over all.....	()	45.0 mm.
Antero-posterior length M ¹ -M ³ over all.....	()	52.0 mm.
Antero-posterior length Diastema.....	()	16.0 mm.
Antero-posterior diameter P ¹	10.7 mm.	()
Width.....P ¹	11.0 mm.	()
Antero-posterior diameter P ²	()	13.6 mm.
Width.....P ²	15.4 mm.	15.2 mm.
Antero-posterior diameter P ³	()	14.4 mm.
Width.....P ³	()	18.5 mm.
Antero-posterior diameter P ⁴	15.5 mm.	14.7 mm.
Width.....P ⁴	20.8 mm.	20.6 mm.
Antero-posterior diameter M ¹	17.3 mm.	17.3 mm.
Width.....M ¹	20.2 mm.	20.2 mm.
Antero-posterior diameter M ²	19.1 mm.	18.5 mm.
Width.....M ²	22.4 mm.	21.7 mm.
Antero-posterior diameter M ³	()	16.2 mm.
Width.....M ³	()	22.1 mm.

It is possible, both morphologically and stratigraphically, to derive all other known species of the genus *Hyracodon* from *Hyracodon petersoni*, or perhaps, from something very close to it, with a larger posterior buttress on M³. There have been two recent revisions of the genus *Hyracodon*, by Troxell (1921) and Sinclair (1922). In general, I agree with Sinclair, that he has established the type of *H. nebraskensis*, and that the well-defined species in good standing are: *H. arcidens*, *H. nebraskensis*, *H. apertus*, *H. leidymanus*, and also, of course, *H. petersoni*. *H. arcidens mimus* Troxell and *H. selenidens* Troxell appear to be minor variants of *H. arcidens*, which it is of doubtful value to recognize nomenclatorially¹. A brief key to the species of the genus *Hyracodon* is appended.

Hyracodon petersoni, sp. nov., Titanotherium Beds, no premolars molariform, median valleys of P³ and P⁴ open widely to the rear.

Hyracodon arcidens Cope, Titanotherium and Oreodon Beds, no premolars molariform, protoloph curves around metaloph in P²-P⁴, fusing as a continuous crescent after slight wear.

Hyracodon nebraskensis (Leidy), Oreodon and Protoceras Beds,

¹*Hyracodon priscidens* Lambe (Trans. Roy. Soc. Can., 2, XI, Sect. 4, pp. 37-42, 1905) from the Titanotherium Beds of Saskatchewan, should probably, as Sinclair states, be referred to *H. arcidens*. It differs rather less from *H. petersoni* than do other specimens of *H. arcidens*, furnishing a stratigraphic, and, to some extent, a morphological intermediate.

protoloph and metaloph of P^4 parallel, but intimately joined by a "mure."

Hyracodon apertus Sinclair, Oreodon and Protoceras Beds, protoloph and metaloph of P^4 separate and parallel.

Hyracodon leidyanus Troxell, Protoceras Beds, (earlier range doubtful), protoloph and metaloph separate and parallel, on both P^3 and P^4 .

REFERENCES.

Troxell, E. L., "*New Species of Hyracodon*," Am. Jour. Sci., Vol. II, July, 1921, pp. 34-40.

Sinclair, W. J., "*Hyracodons from the Big Badlands of South Dakota*," Proc. Amer. Phil. Soc., Vol. LXI, No. 1, Aug. 29, 1922, pp. 65-79.



Hyracodon petersoni Wood. Type.
C. M. Cat. Vert. Foss., No. 3572. Natural size.